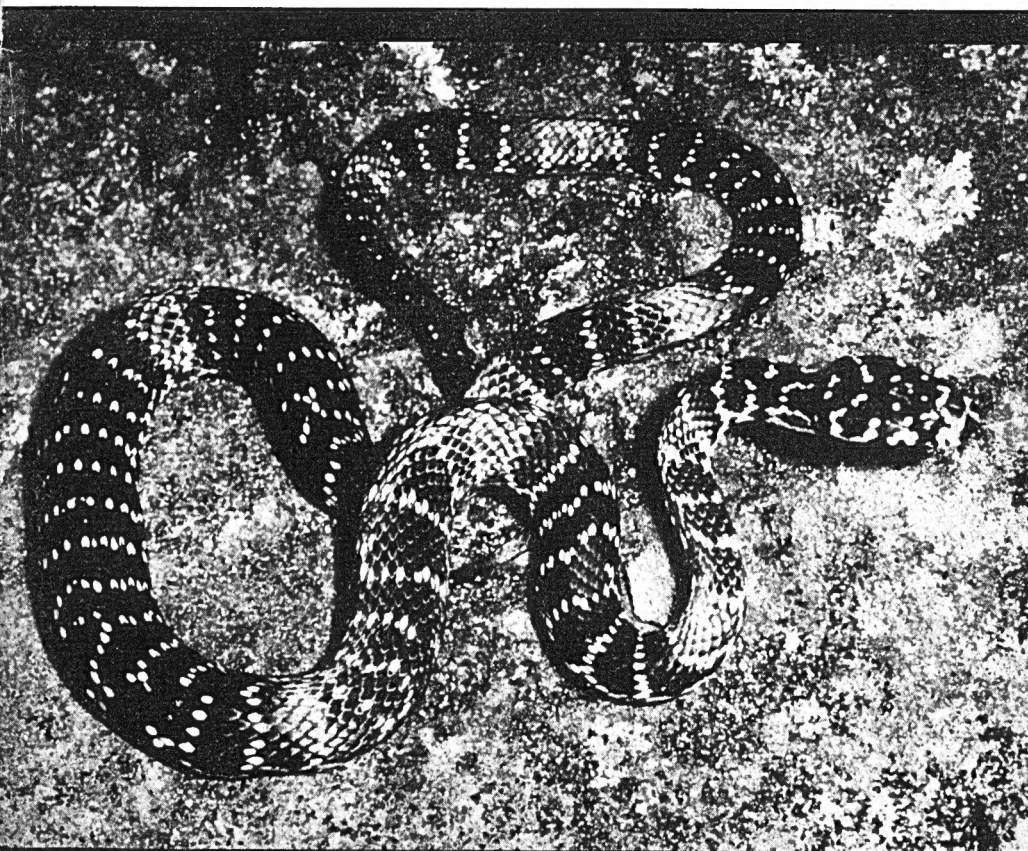


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June, 1973

HERPETOFAUNA

JOURNAL OF
THE AUSTRALIAN HERPETOLOGICAL SOCIETY



Hoplocephalus bungaroides
(Broad Headed Snake)

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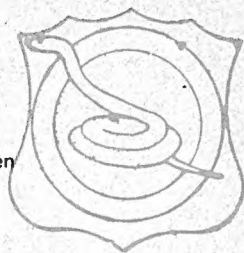
1. To collect and exchange information on all aspects of Australian reptiles and amphibians by means of monthly meetings and publication of the Journal of the Australian Herpetological Society.
2. To encourage the study of reptiles and amphibians — both in their natural state and in captivity.
3. To promote a sane and reasonable attitude to reptiles and amphibians among the general public.
4. To assist in the organization of field work in all parts of Australia and to render all possible assistance to members on study trips away from their home territory.

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OBSERVATIONS ON THE COMMON KEELBACK SNAKE, NATRIX MAIRII, IN BRISBANE, SOUTH-EASTERN QUEENSLAND.

B. Lyon

Species: Amphiesma mairii. (Gray) 1841.

Introduction:

This is a snake of moderate proportions growing to a maximum length of 4 feet. Colour varies greatly from grey to olive and rich brown to even yellow and red. Most specimens have flecking on the dorsal surface which may form irregular thin bands. The ventral surface is usually a creamy colour with varying shades of green and yellow. The dorsal scales are in 15 rows and strongly keeled which makes it easily distinguishable from other Australian snakes. Both the anal plate and the subcaudals are divided.

A more comprehensive description of the species can be found in standard texts.

Amphiesma mairii is a tropical coastal snake; its range extending along the east coast of Queensland and northern New South Wales. It is also found in parts of New Guinea and adjacent islands. Queensland Museum records show that the range rarely extends more than 100 miles inland from the coast. At present the western-most locality is Wandoan — approximately 150 miles west of Gympie. I have found no records of specimens taken from over 2,000 feet in altitude.

Virginia Studies:

This is a summary of my observations on the habitat and habits of Amphiesma mairii over the last 2 years in the Virginia area, which is situated approximately 7 miles N.N.E. of the G.P.O. in Brisbane.

The swampy nature of this comparatively unsettled district apparently accounts for the large population of A. mairii. A description of the area in which the Keelback was studied can be found in my article "Area Survey of Reptiles in the Outer North-Eastern Brisbane Suburbs" in the November 1972 issue of Herpetofauna.

Field trips constituted the most important part of the study, and these were undertaken on an average of 2 per week, at various times during the day and occasionally in the evening. The methods used were: Searching for active specimens in all possible habitats and lifting cover such as concrete and sheet iron. The latter was by far the most rewarding in finding snakes. As a result of these field trips over 170 different snakes were found. I distinguished individual specimens by size and markings.

Observations in captivity were also important, and specimens were studied in a large fibro enclosure of 140 sq. feet, in which a habitat similar to their natural environment was formed. The actions of the snakes in this enclosure are presumed to be fairly close to their actions in the wild. Specimens in captivity were observed daily, sometimes along with weather readings.

Observations:

From field observations it appears that the populations of A. mairii congregate around the areas of water, and their numbers decrease the further one goes away from water. The dependance on water is not so vitally directed to the snake itself as to the frogs which breed in these areas and upon which it feeds.

According to my observations, most snakes appear to spend comparatively little time in the water itself.

A. mairii is an excellent swimmer however, and may remain submerged for long periods of time. Although no experiments were made, one specimen was observed to remain under water for 20 minutes.

Keelbacks sometimes used water as a means to obtaining food and also escaping from predators. On numerous occasions I have observed snakes basking on the surface of the water both in the field and in captivity, especially in hot weather and prior to skin sloughing.

The times when the skin is shed appears to show little regularity. Juveniles shed quite a lot, females do so after laying their eggs, and generally the skin is shed more often in the warmer months than in winter. One other notable time is when the snakes come out of their inactive period in early spring.

Even though numerous snakes may be found around one water hole they rarely congregate in large numbers in the one hiding place. It is not uncommon to find two snakes under the same cover, but I have never found more than three together. The choice of cover appears to be influenced by the weather and the time of year. In summer Keelbacks hide mostly under sheets of iron, and also under concrete rocks and in burrows. It is interesting to note that I have never found Amphiesma mairii under logs and rarely under planks.

A. Mairii in the Virginia study area do not hibernate but, with the onset of colder weather in late May — early June, they become inactive and are frequently found under solid cover. Up to three adults have been found together under concrete blocks at least a foot underground and also in burrows.

In the Virginia area, A. mairii are diurnal during the colder months, moving about in search of food or sunning themselves in the mid-late morning period and late afternoon. Captive specimens were never active when the temperature dropped below 65°F. During the summer they appear to be active both during the day (mid morning 9-11 and late afternoon 4-6) and in warm weather throughout the night. It is obvious from my observations that the snakes move about a lot in search of food but data on distances travelled is incomplete at present. Wet weather, especially at nights, activates Keelbacks, and they feed on frogs which come out from hiding to mate. On these occasions the snakes gorge themselves because such a wet night may not take place for a long period of time.

Frogs constitute most of the diet, but fish, tadpoles and small lizards are also eaten. The frogs are eaten either head or hindquarters first (usually hindquarters) often with great rapidity. The food is eaten whenever the snake is active and sought by the snake when either the

food item is active or else it is flushed out from under cover (observations in the field and in captivity).

On one occasion in the field I came across four juvenile Keelback feeding in shallow water on small cane toads, Bufo marinus. On two other instances I have seen Keelbacks feeding on toads, and twice specimens regurgitated Bufo after capture. These snakes appeared to suffer no ill effect.

The species eaten by Keelbacks were:

Peron's Ground Frog	<u>Limnodynastes peroni</u>
Common Ground Frog	<u>Limnodynastes tesmaniensis</u>
	<u>Hyla rubella</u>
Green Tree Frog	<u>Hyla caerulea</u>
Introduced Cane Toad	<u>Bufo marinus</u>
Mosquito Fish	<u>Gambusia-sp</u>
Common Grass Skink	<u>Leiopismia guichenoti</u>

These observations are based on feeding in captivity and occasional sighting in the field, not on gut content.

Internal parasites are common in the Keelback as with other frog eating species. On dissection worms were found along the stomach and oesophagus but were most prominent under the skin where they formed small cyst like balls. It appears that most specimens have these worms though they are more evident in larger specimens. Large numbers of worms appear to make snakes sluggish.

The Keelback is extremely nervous in disposition and tries to escape under cover into grass, down a burrow or into water when disturbed.

If grabbed by the tail, some specimens may whirl around wildly until they are released or the tail breaks. Under one third of those over two feet in length that were captured had broken tails.

In contradiction to Worrell (1963) and Covacevich (1970) who state that A. mairii rarely bite, I have found both juveniles and adults will readily bite if cornered or molested. They raise the head high above the ground, flatten out the back of the neck and lunge rather feebly towards the aggressor.

Another defence method is the exuding of an unpleasant odour which is hard to remove and which remains on ones hands for a long period of time. This odour is only released during the initial capture as most specimens settle down after a period of captivity.

If the Keelback is provided with a large cage with sufficient cover, a moist environment, and an adequate supply of live frogs it will thrive in captivity and mate every spring.

The arrival of man in this area does not appear to have depleted populations.

Breeding

Mating in the Virginia area takes place from early October to early December. The snakes mate either in the open or under cover, whenever they are active.

I have never found eggs in the field but they are probably layed under piles of debris, logs, or possibly in burrows. (These burrows referred to are made by other animals such as the Water Skink, Sphenomorphus quoyii or the Bush Skink, Ctenotus lesueurii).

In captivity specimens have layed eggs under solid cover such as logs and concrete.

The eggs can be successfully hatched if put 1" — 2" below the surface of cool damp soil. A stable amount of moisture must be maintained and the eggs should be put in a place where there is little temperature fluctuation.

From 5 — 15 eggs are layed in a clutch (average clutch size is 8) and they hatch 12 — 15 weeks after being layed — from February to April in Virginia. A two foot specimen commonly lays 8 eggs at a time. The hatchlings measure between five and a half and six and a half inches.

Acknowledgements:

I would like to thank Miss J. Covacevich for her suggestions concerning the editing of this article, and Mr. C. Limpus for his advice. I would also like to thank my schoolfriends who assisted in field work.

Literature Cited:

Covacevich J. (1970) "Snakes of Brishbane" Queensland Museum.
Worrell E. (1963) "Reptiles of Australia" Angus & Robertson.

Note:

Any comments or criticisms would be most welcome — my address is 178 Bilsen Road, Wavell Heights. 4012. Qld.

REPTILIA/HERPETOFAUNA

The original magazine of the Australian Hereptological Society "Reptilia", has been reprinted and the complete set is available at a cost of \$1.80.

In addition some back issues of Herpetofauna are available in limited quantities at a cost of 50c per copy.

Enquiries should be directed to the librarian or assistant librarian.

FURTHER NOTES ON THE JACKY LIZARD AMPHIBOLURUS MURICATUS IN CAPTIVITY.

by S. Groom

General

The Jacky Lizard seldom drinks from a pond or water dish placed in the cage, so I set about to use a different method, whereby the lizards would voluntarily drink. I found that if I hosed down the interior of the cage on a hot day, although this did scare some into hiding, they soon emerged to quench their thirsts by licking drops of water from rocks, leaves and grass.

I have also found that during the warmer weather the Jacky Lizard relishes small pieces of soft banana, although still showing a marked preference for the more natural foods, which form the lizard's diet. Many lizards also direct their preferences towards such things as Bees, Earwigs, and even daisies.

Territorial Behaviour

During the breeding season, from October to December, I have noticed the males indulge frequently in territorial displays. An aggressive male uses one of two ways to ward off a rival male. The first is to approach the male whilst rapidly bobbing the head and waving the forearm. The lizard being approached lies as low to the ground as possible and bobs his head up and down very slowly. The aggressor then starts viciously biting the other's tail.

The other form of territorial display I have seen is that whereby two or three males form a circle with their bodies, which are raised as high as possible off the ground. The body of each lizard is flattened sideways as they move anti-clockwise trying to bite each other's tails. It is of interest to note that fighting lizards ignore human presence.

The cage in which my lizards are kept is very nearly natural, so I believe that the displays which I have observed could occur in the wild.

The lizards mate and fight just as they would in the wild, the only difference being that there is a larger number of lizards of the same sex confined to a smaller area than would occur naturally.

Breeding

As it is nearing the end of the breeding season I have found that the males have somewhat "slowed down" in their attempts to mate. Most females I have in the cage are now carrying eggs and tend to ward off any males, which try to mate with them.

I have noticed that some females have no skin left behind their necks. I'm not certain yet what has caused this but I think it could be due to more than one male mating with the one female or perhaps just an aggressive male within the cage.

In conclusion I would be pleased to hear from any other member, especially interstate, who keeps these lizards and any observations, similar or different to mine, that he may care to offer. My address is 3 Joyce Avenue, Glen Waverley. Vic. 3150.

THE BROAD-HEADED SNAKE

HOPLOCEPHALUS BUNGAROIDES (BOIE)

by G. White

The following is a collection of information I have gathered over the last 18 months, on the above species. Although a lot of research has gone into the composition of the article it is still incomplete. By this I mean incomplete as far as reproduction and distribution are concerned, although the latter is nearing completion. I would appreciate as much information as possible on this species and also any specimens.

Description

Broad head distinct from neck, even more so when disturbed. Average length is 30" but specimens over 3' have been recorded.

Rostral scale is hardly visible when viewed from above, frontal larger than supraoculars. Mid-body scales are smooth and in 21 rows; ventrals range from 203 to 248 and are rigid at both sides; anal is entire; subcaudals range from 38 to 69 and are entire.

Colour

Jet black above, with irregular, dotted yellow bands across the body becoming fainter toward the tail. Ventral surface grey to black.

Distribution

The distribution of this species DOES NOT as once thought, extend into Southern Queensland. The reason for this belief, was due to some preserved specimens lodged in the Queensland Museum, apparently collected in Southern Queensland, and labelled H. BUNGAROIDES. Since Miss Covacevich's appointment at the Museum, she has identified them as H. STEPHENSII.

To date I have found its distribution confined to a small area surrounding Sydney. This area extends from Kuringai Chase National Park in the north, to Mt. Victoria and Kanangra Walls in the west, and Burrier in the south.

There are still a few reports of specimens outside this area that have yet to be investigated, but, I am almost certain they are H. stephensii.

Reproduction

To my knowledge, very little is known about this subject. However, there are reports of specimens being born in captivity, numbering between 6 and 20 and averaging 8" in length.

Feeding

This species feeds readily on Lesueurs Geckoes, Copper-tailed Skinks and usually mice. It has been known to take small rats, birds and frogs. I have also found some specimens to take and apparently like Three-toed Skinks. A large, adult, consumed two large, adult Small-eye Snakes (Cryptophis nigriscens).

The most feeding takes place at night. I and others have found that they consume more food during Spring and Winter than any other time of the year.

I also believe that they feed close to their home territory. These areas are usually well populated with the reptiles' main foods, and are usually positioned on the same ridge as the snake, or very close to it.

Habits

This species becomes very aggressive when disturbed, striking rapidly and accurately at its aggressor. The venom is strongly neurotoxic, with considerable haemolytic action. Due to the size of the snake, it is not considered dangerous to man, except in the case of young children.

It becomes very active after dark on most nights throughout the year. It has also been recorded sunning during the early morning and, unusually, during the middle of the day, with a temperature of over 80 deg F.

THE BARRED SIDED SKINK SPHENOMORPHUS TENUIS TENUIS (Gray) IN THE SYDNEY REGION

by P.R. Rankin

Introduction

Following are the results of a study initiated in 1970 on Sphenomorphus t. tenuis in the Sydney region. Most observations were made around my home area — Earlwood, but a series of observations were made in bushland to the immediate North and farmland to the immediate West of Sydney, also captive specimens. Dissection specimens were supplied by the family cat.

All observations were made by myself except where otherwise specified.

Although new information on the species is presented here, the study is far from complete and observations will continue.

Habitat

Apparently micro-habitats of S. tenuis in non-urban areas may be divided into two major categories. These are habitats formed by rocks; or those provided by trees. If an area has both, and the trees are numerous, then generally trees will be used in preference to rocks.

(i) Rock-formed Habitats:

The skinks prefer to live on exposed surfaces of rocks (often cliffs) which are well weathered and contain crevices, holes and small ledges. The rock face need not be in direct sun. Indeed, I have found colonies on rock faces exposed to direct rays of sunlight all day, while I have found others in situations which do not receive any direct sunlight at all. On these rock faces they inhabit the deeper holes and crevices.

(ii) Tree formed Habitats:

The homesites occupied by the skinks in trees are numerous. I have frequently located specimens in the rotten wood just below bark on fallen trees, or beneath the peeling bark on dead trees. On one occasion in a rural area at Leppington, N.S.W. I located a scattered colony on the top of a small hill. All the specimens found were in hollow stumps each about 1 metre in height. They were occupying either the central hollow or the radiating cracks in the timber.

On only one occasion have I located a specimen in a live tree, but more searching will undoubtedly reveal more (since situations such as hollow logs, cracks, etc. are common in living trees). The specimen was an adult and inhabited a giant Angophora tree in bushland to the north of Sydney. It was in a crack in the burnt-out base of the tree 2.5 metres from ground level. Direct sunlight could only have reached this spot in the late afternoon.

The above specimen was in wet sclerophyll forest, but I have more commonly found them in dry sclerophyll forest.

A further group of habitats are provided by man — mainly in urban areas. In the vicinity of my home, S. t. tenuis is commonly found in cracks in old stone and brick fences. A favourite position is in a crack which often forms adjacent to letterboxes which are recessed into walls and fences. Specimens were also found in the latter situation at Concord. (Judging by the lie of the land and the few native trees in parks nearby at Concord, I am willing to speculate that this population was originally tree-dwelling but has adapted to the changed habitat.)

In general, specimens inhabiting rock and brick walls or fences in urban areas tend to use those with similar conditions to rock faces.

A further example of habitat not mentioned above is this:— Mr. G. Daly found specimens in a rubbish-filled pit among the ruins of a house near Bankstown. He also records having found one specimen under masonite on the ground.

Feeding

A rough guide to feeding habits was made by a few dissections, analysing faeces of wild specimens and from what specimens have eaten in captivity. Dates are given since seasonal variation in diet is possible.

The stomach of a specimen from Earlwood in October, 1970 revealed the remains of a spider.

In early May, 1972 a sample of faeces was examined from a small group in Earlwood. Over 90% of the matter consisted of the remains of small ants — their heads were obvious under magnification. Also present were the remains of a beetle and a grasshopper's leg.

In December, 1972 a comprehensive series of faeces were collected from a different group in Earlwood. Close to the colony where these were collected is a lamp-post. The most common item by far was beetles. Most faeces were almost exclusively composed of beetle elytrons. Several small insect wings were also included. One faecae consisted almost entirely of the remains of an insect pupa, and another

the remains of a segmented larva similar to a mealworm. In none of these faeces was there found any material which could be traced to ants.

Food items taken by captive specimens in my possession are:— meat, winged ants, earwigs, small beetles, smooth skinned caterpillars, slaters and one juvenile specimen ate an adult Ablepharous greyii placed in the same cage. Mr. A. Antennor records a wild specimen as eating banana, but none of my captive specimens have done so.

Activity

Essentially, Sphenomorphus tenuis seems to be crepuscular (mainly emerging in early morning and late afternoon), but not a truly nocturnal lizard. I have found specimens active 40 minutes after sunset in April and they are frequently found to be active 20-30 minutes before and after sunset during most warm months. Mr. A. Antennor has found an active specimen at 9.00 p.m. in summer. Also, they often emerge very early in the morning (but not before sunrise) and I have frequently located specimens active or lying outside their holes, etc. long before the sun reaches their position (if at all).

They may be active at various times during the day, especially gravid females who sunbake whenever possible. However, during summer at least the peak period of activity (food gathering) is 30 minutes before to 30 minutes after sunset. This has been confirmed with captive specimens. Evidence of this is also supplied by the feeding habits of the group from which faeces were examined in December, 1972 (see section on Feeding).

So far I have not been able to ascertain the correct reason for the period of activity in early morning, but it is possible that the lizards use this period to obtain moisture (from dew). Captive specimens have succumbed rapidly from dehydration.

I have found that during the latter portion of the second activity period their vision becomes poor due to darkness and it is during these times that the lizard is easiest to catch.

In April, 1972, temperature studies were carried out on a small group inhabiting a hole in a brick wall near my home.

Temperatures were taken:

- a) 3 cm inside the hole.
- b) at the entrance.

It was impracticable to capture the individual lizards each time and and take their body temperature. This particular group was never observed sun-basking, and no sun ever reached the entrance of the hole, but the wall was warmed up from behind by the sun.

		°C	Time	Remarks
1.	a)	26°	5.55 p.m.	Active
	b)	24°		
2.	a)	22°	6.05 p.m.	Active
	b)	21°		
3.	a)	24°	5.30 p.m.	Active
	b)	21°		
4.	a)	28°	5.40 p.m.	Active
	b)	26°		

5.	a)	23°	5.40 p.m.	Active
	b)	21°		
6.	a)	19°	5.50 p.m.	Active
	b)	17°		
7.	a)	19°	5.30 p.m.	Not Active
	b)	15°		
8.	a)	17°	5.50 p.m.	Not Active
	b)	16°		

These temperatures were taken in a space of about 2 weeks, and the sun set at about 5.40 p.m.

Note: Where the word active appears in the above table it means that the lizard(s) were at the entrance of the hole in their "observation stance". This consists of lying with about two-thirds of the body protruding from the hole. Rarely will the lizard be found at this time of the day running actively about — unless it is chasing a food item. Occasionally, at dusk specimens will be found lying head-down and straight on a vertical surface - close to the home-side, e.g. on a brick wall.

It appears that the minimum temperature for activity in this group was about 15°C — 17°C outside and 19°C inside the hole.

The juveniles of the species seem to be more active (in the sense that they move around over the rock face, etc.) than the adults. They are also more often found during the middle of the day and early in the morning and are easier to catch than adults.

Defensive Reactions

Tail shedding is a common occurrence in sphenomorphous tenuis. In the metropolitan area, about 50% of adults which I observed had regenerated tails, but the figure for rural and bushland communities was much lower.

All the specimens caught by the family cat had dropped their tails and in one case where I recovered the tail, it was in three pieces.

On being grasped by a human, the lizard will generally attempt to bite. Quite often it then resorts to defecating on the hands of its captor.

Reproduction

On 14th October, 1970, the family cat caught a *S. tenuis* at Earlwood. Upon dissection I found it to contain four eggs. These measured:— .7 cm x .6 cm; .7 cm x .6 cm; .7 cm x .6 cm; .6 cm x .5 cm.

One of these was opened, but no embryonic development had taken place.

However, it appears that the species is ovoviviparous. I have been told by Mr. A. Antennor of a specimen he had which produced seven live young. Also in November, 1972, in a colony near my home, several gravid females were found to be present. In the first week of December very young juveniles were found in close proximity and the number of gravid females dropped sharply. Here are the measurements of one of these juveniles, presumed to be taken soon after birth:

SVL — 30 mm.

VTL — 44 mm. Overall length 74 mm.

Weight was approximately 1 gram.

Apparently, the adults tolerate the presence of the juveniles, for some time after birth. The group upon which temperature studies were done in April, 1972 consisted of two adults and two juveniles in the one hole. Assuming that these lizards were born in about December, 1971, they had been in close proximity to the adults for five months without ill effect. Unfortunately this group's home was demolished and I was unable to observe for how long the juveniles stayed with the adults. In the area of this small group there were relatively few suitable habitats, so this could account for the juveniles being with the adults. The measurements of one of these juveniles in April were:

SVL — 39 mm.

VTL — 62 mm. Overall length 101 mm.

Weight approximately 2.5 grams.

I have always found that in captivity the adults can be kept with juveniles without trouble.

Adaptive Colouring

The colouration of S. tenuis is essentially cryptic and may be regarded as being of a disruptive pattern. The outline of an immobile lizard is effectively broken up by the grey colouring with irregular black bars and checks. Laterally, instead of having one thick black line, there appear a series of vertical bands which also tend to break up the general outline.

In some specimens the bands on the sides of the lizards are joined and the spots dorsally are also joined into transverse stripes. However, there seems to be no correlation of these two varieties to different habitats and they freely interbreed.

The disruptive patterning is especially effective at least to humans during the second main activity period when the lizard is in semi-darkness.

Factors Controlling Population

By far the greatest controlling factor of S. tenuis in the metropolitan area is the demolition and renovating of old buildings, walls and fences; removal or destruction of rock faces and the cutting down of old trees. On several occasions I have known colonies in fences or walls to be destroyed when the owners decided that the cracks were unsightly and had them cemented up. The most vulnerable populations are those in man-made structures.

Periods of heavy rain may have some effect upon them as the rock face habitats especially, are subject to seepage. I have found a specimen after heavy rain under rubbish in my backyard.

In the bushland areas, bushfires would be a controlling factor and land clearing, grass fires and burning off would all contribute to the control of the species in rural areas.

Probably the greatest predator of S. tenuis in the metropolitan area would be the domestic cat, and this was well evidenced to me by the number of specimens caught by our family cat.

Some birds could be potential predators of S. tenuis and of course, in bushland and rural areas, potential predators must also include snakes.

The fact that juveniles are easier to catch than adults could also be regarded as a controlling factor.

Status

Although widespread, this skink only seems to be common in a few selected areas and these are generally isolated from other groups. A thriving group may be found, and then no other for miles around. Of course with such a cryptic lizard it is difficult to properly assess status. It may probably be said that *S. tenuis* is moderately common, if somewhat localised species in the Sydney Metropolitan Area.

Conservation

On the whole, I would say that *S. tenuis* is in no danger of extinction and seems to be holding its own well. It is a lizard which has the ability to adapt to man's environment.

As for natural colonies in bushland areas, I have found them to be secure in reserves to the north of Sydney (e.g. Kuring-gai Chase N.P.) and on reserves fronting Sydney Harbour. Probably the populations in rural areas to the west of Sydney will eventually be overtaken by the urban sprawl, but I doubt that they will be lost.

Sphenomorphus *T. tenuis* it seems is with us to stay - and no new conservation measures are required to preserve it.

Some Measurements.

	SVL	VTL	TT	TS	
<u>Earlwood N.S.W.</u>					
1.)	75 mm.	7 mm.	10 mm.	15 mm.	Tail missing,
2.)	75 mm.	73 mm.	11 mm.	16 mm.	gravid female
3.)	57 mm.	21 mm.	8 mm.	12 mm.	70% of tail
4.)	70 mm.	108 mm.	9 mm.	14 mm.	regenerated
					About 70% of
					tail regenerated.
<u>Mosman N.S.W.</u>					
5.)	68 mm.	88 mm.	9 mm.	14 mm.	30% of tail
					regenerated

Note:

SVL = Snout-Vent Length

VTL = Vent-Tail Length

TT = Tympanum-Tympanum Width

TS = Tympanum-Snout Length

I would be very grateful indeed to hear from anybody who has any information on *S. tenuis* at all — it doesn't have to come under the categories used in this paper. Especially I am interested in localities in the Sydney region since I hope to map their distribution over this area. I may be contacted at the following address:

12 Finlays Ave.,
EARLWOOD. N.S.W. 2206.

Acknowledgements

I would like to thank Mr. G. Daly and Mr. A. Antennor for their helpful information. Mr. G. Daly especially with whom I have often

discussed this paper. I must also thank my mother for typing most of the manuscript.

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BOOK REVIEW

D. Millar

CROCODILES — Their Natural History, Folklore and Conservation.
C.A.W. Guggisberg (Wren Publishing Pty. Ltd.)

For about eighty million years crocodilians, virtually the same as we know, have been the master predators of their environment. Much earlier than this, more varied forms had arisen but are long since extinct, leaving twenty odd species the last descendants of the archosaurs. They remained essentially unchanged for vastly longer than it has taken man to stand upright and progress to the present day. In historic times, particularly the last half century, man has investigated their biology, grouped them, for his convenience into eight genera and even dabbled in the husbandry of some species. His most dedicated involvement though has been to make them into handbags.

Many authors, a few with some first hand experience, have written about crocodilians. Most accounts were sensational, e.g. Tarzan stories and Manly Dam Monsters, but a lesser number of technical works have been scattered through diverse periodicals not readily accessible to many interested persons.

Guggisberg in this book appears to have condensed much of the information from works in his excellent bibliography to provide a readable popular account of the evolution of crocodiles, their natural history inter relationship with man and finally their conservation. He appears to have only had experience with the Nile Crocodile, *Crocodylus niloticus* and for this reason, and as more research has been done on this than on any other except *Alligator mississippiensis* the American alligator, treats it more fully than other species.

Many of the illustrations are repetitious general photographs of C. niloticus, indeed the majority are of this species. Had the text been liberally supplemented by relevant photos the impact of the book would have been much enhanced.

Treatment of Australasian species is, as usual, scanty but much of the information concerning the feeding and breeding habits and anatomical modifications are fairly general.

It is likely that the interest of the reader will be stimulated by Mr. Guggisberg and that he will do library research to gain more detailed information. The book is well worth reading though at \$6.75 most will prefer to borrow rather than buy a copy.

THE FASCINATION OF REPTILES — Maurice Richardson (Andre Deutsch)

In his chapter dealing with the Elapidae, Richardson deals rather smugly with an old account by J. G. Woods, describing the coral snakes (Micrurus spp.) as virtually harmless. It may have been as a result of his underlying concern as to the consequences of this error that he warned of the Taipan "It is ferocious in the extreme and will attack on sight, coiling, waving its tail and biting quickly several times".

Unfortunately the text is not infrequently either inaccurate or ambiguous, demonstrating misconceptions of the author. Of Crocodylus porosus he says "This is the one with which I find it easier to identify, not slouching in wait in the heavy daze of a tropical swamp, but swimming far and free in warm seas", and of the King Cobra Ophiophagus hannah "Its diet consists entirely of other snakes and sometimes members of its own species; but there seems to be doubt about whether it will take venomous snakes". It would seem that this demonstrates the danger of re-arranging the accounts of others without personal knowledge of the subject. In a coverage as broad as is attempted in this book, one could not expect of the author personal experience with all species treated, but one would expect a reasonable number of original observations.

My preference in reference books is for comprehensive indexing, well defined discussions of subject matter, plenty of subheadings, photographs and diagrams and wherever possible, as with description of various species, a repetitious lay out which makes for efficient location of any desired information. This book satisfies none of my ideals, is often rambling in style, inconsistent in lay out and uneven in coverage. The illustrations, all drawings, show some distortion of perspective as seen in wide angle lens photography. Indeed the otherwise excellent black and white drawings could well have been taken from photographs. The colour illustrations are of fair quality, but why in this day and age use watercolours rather than photographs?

It is always easier to criticise than to create, however most of Richardson's information appears to be from sources readily available to most and it would be preferable for readers to consult source material than accept another's interpretation. In all this is an unremarkable book which I cannot recommend, particularly at \$9.50.

MEASUREMENTS AND NOTES ON ADULT AND JUVENILE PINK TONGUE SKINKS (TILIQUA GERRARDII).

By T. Miles.

(a) ADULT SPECIMEN

Collected November 20th, 1972 at Coffs Harbour inside an old shed. The specimen, when caught had just completed sloughing.

Measurements: S.V. — 195 mm. V.T. — 205 mm. T.L. — 400 mm.
E.E. — 15 mm. E.S. — 25 mm. T.T. — 30 mm. T.S. — 45 mm.

S.V. = snout to vent, V.T. = Vent to tail. T.L. = Total length. E.E. = Eye to Eye, T.T. = Tympanum to tympanum, T.S. = Tympanum to snout.

Colouration: is comprised of black and light brown to white evenly spaced bands extending along the body and tail.

Feeding: Will only feed on slugs and snails, refusing to eat banana or minced meat. Feeding takes place twice a week, consisting of five large snails and any slugs that might be found.

(b) JUVENILE SPECIMENS

Fifteen young were born; 12 on Tuesday, January 9th and three on Wednesday, January 10th.

At birth all of the young immediately began to eat their attached yolk sack. The juveniles at birth measured approximately:

S.V. — 58 mm. V.T. — 58 mm. T.L. — 116 mm. E.E. — 8 mm.
E.S. — 10 mm. T.T. — 10 mm. T.S. — 16 mm.

Fourteen of the fifteen young are still living.

On March 12th six of the young were measured each registering the following measurements:

1. S.V. — 70 mm. V.T. — 72 mm. T.L. — 142 mm. E.E. — 8 mm.
E.S. — 12 mm. T.T. — 12 mm. T.S. — 20 mm.
2. S.V. — 70 mm. V.T. — 75 mm. T.L. — 145 mm. E.E. — 8 mm.
E.S. — 10 mm. T.T. — 12 mm. T.S. — 18 mm.
3. S.V. — 75 mm. V.T. — 85 mm. T.L. — 160 mm. E.E. — 8 mm.
E.S. — 12 mm. T.T. — 12 mm. T.S. — 20 mm.
4. S.V. — 78 mm. V.T. — 85 mm. T.L. — 163 mm. E.E. — 8 mm.
E.S. — 12 mm. T.T. — 14 mm. T.S. — 20 mm.
5. S.V. — 80 mm. V.T. — 85 mm. T.L. — 165 mm. E.E. — 8 mm.
E.S. — 12 mm. T.T. — 12 mm. T.S. — 20 mm.
6. *S.V. — 85 mm. V.T. — 100 mm. T.L. — 185 mm. E.E. — 8 mm.
E.S. — 14 mm. T.T. — 14 mm. T.S. — 20 mm.

* This specimen has shown the greatest rate of growth, growing a total of 69 mm. during the past two months.

Colouration: This varies in individual specimens, all comprising of evenly spaced bands of black and light brown, black and bronze or black and fawn, with all bands extending along the body and tail. Tongue colour in all specimens in BLUE.

Feeding: The juveniles will feed upon slugs, snails, minced meat, banana and tomato, showing preference for slugs and snails.

Housing Conditions: Housing consists of an outdoor cage built directly on the ground as it was thought the juveniles would gain both moisture and any small insects or herbage. The cage was also built as such to produce semi natural type conditions.

From the rate of growth and the health of the lizards this method is proving itself successful.

LETTER TO THE EDITOR

In reply to Mr. Haffenden's letter commenting on my article on feeding I report that I too have not succeeded in getting snakes other than Typhlops to eat insects. A lot of our small snakes are recorded as being insect eaters, but I feel sure that this idea has resulted from examination of stomach contents in dead specimens.

I have discovered that our smallest snakes (even their juveniles) feed on small skinks. Some add frogs to this diet. As skinks and frogs eat insects, when these small snakes eat a meal, they end up with insects in their stomachs. The hard outer shells of insects are less digestable than the lizard or frog bodies, so it is not surprising that dissection will show a stomach and intestine full of insect parts.

Mr. Gough, in the November issue, is dubious about my "same night each week" feeding method. Some snakes which are not good feeders in captivity may need special attention to feeding times, but the majority of snakes are good eaters if they are caged correctly and are presented with the correct food. This latter point is the main secret in successful feeding. I have had snakes of the same species, which will not eat the same food. One specimen eating only mice, and the other specimen, lizards. Discovering the right food made these snakes good feeders.

I have found that temperature, when feeding captive snakes, is not as great a factor as one would at first suspect. Snakes regulate their temperature by moving between warm areas and cool areas in their environment, and on a cool night a snake's body temperature may be high enough for you to feed it. Even despite this I have found that Black, Tiger, and Copperhead snakes will eat when their bodies are actually cold.

Regarding snakes being killed by the food animal, it would seem that where this has happened, the live food has been left in the snake's cage all night. Perhaps the snakes killed were not in good condition and could not deal with their prey. I would recommend that live food be left in with a snake for only 10 or 15 minutes, and then removed if it is not eaten. If a snake is going to eat, it will usually set about the task quite quickly.

I have never had a snake killed in the above way even though I have been live feeding for eight years now, so naturally I would not agree that it is a dangerous practice.

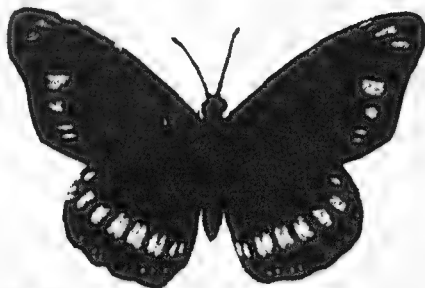
The eye of a snake seems to present worries to people who contemplate live feeding. But I've never had a snake lose an eye, nor even seen a snake in the wild with a damaged eye. The reason is that the eye is protected by a hard transparent scale, and the eye-ball can move about a little in the socket. A mouse's tooth pressed on the eye scale would only push the eye to the side and would not damage it. Even if the mouse's tooth went right under the eye scale it would cause no damage. In one of my experiments I took a pin and pushed it under the eye scale of a snake. The pin crossed behind the eye scale for the whole width of the eye, but the extremely elastic skin holding the eye-scale stretched all the way and was not pierced by the pin point. This elastic skin around the ocular can sometimes be seen on sloughs.

The brain of a snake is entirely enclosed by bone so that no penetrating bite can cause injury there. When a reptile's body is pierced, the healing ability is nothing short of miraculous. I had a tiger snake with three bullet holes through its body. The injuries were so placed that the lungs liver and intestines could not have avoided injury, yet the snake was perfectly healthy. I also kept a tortoise which a council workman had put his pick straight through. Despite the massive injury the tortoise lived a normal life.

I think one is missing out on observing some of the snakes most interesting behaviour if always feeding dead food.

D. Adams
25 The Broadwaters
Tascott. 2251.

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REPTILES OF THE TAMWORTH AREA

K. Jacobson

SNAKES

Brown Snakes — (Pseudonaja textilis textilis)

Found in almost all dry areas, with the possible exception of high altitudes. Very common

Red-Bellied Black Snakes — (Pseudechis porphyriacus)

Quite plentiful along rivers and creeks, especially in the Moonbi Area, and particularly around Nundle.

Red-naped Snakes — (Furina diadema)

Sometimes found in colonies in the Dungowan area, in tunnels or depressions under large rocks, but rarely on the surface.

Golden Crown Snakes — (Cacophis squamulosus)

Quite rare, the only specimen I've found or heard of, coming from a moist, rocky area of the Moonbi Ranges. (Under a flat rock, in a slight depression.)

Tiger Snakes — (Notechis scutatus).

Rarely found, though sometimes encountered in scattered areas around Dungowan, Nemingha, and the Moonbi Ranges.

Yellow-faced Whip Snakes — (Demansia psammophis)

Occasionally found in dry, grassy areas, scattered with boulders, around Moor Creek.

Coral Snakes — (Brachyurops australis)

Though reported to be common six miles north-east of Tamworth, I have only seen one specimen, which came from Moonbi lookout, under granite slabs.

Dwyer's snakes — (Parasuta dwyeri)

Rarely found, in dry, rocky country on outskirts of Tamworth. Area is quite flat with little shelter.

Bandy-Bandy's — (Vermicella annulata)

Apparently found in small colonies on certain properties on the outskirts of Tamworth.

Carpet Snakes — (Morelia spilotes variegata)

Uncommon, though regularly specimens are found over the area generally, from secluded places to the very close vicinity of towns.

Diamond Pythons — (Morelia s. spilotes)

Very rare. I only know of one specimen being found in the area.

Children's Pythons — (Liasis childreni)

Extremely rare, the only specimen to my knowledge being one I found at Moor Creek, which because of its distance from recorded vicinities for the species, leads me to believe it was released in the area.

Common Tree Snakes — (Dendrelaphis punctulatus)

Reported to be present in the area but no specimens have been produced by anyone."

Blind Snakes (Phamphotyphlops)

Fairly common in the Moonbi Ranges, and in area throughout the Tamworth district.

LIZARDS

Lace Monitors – (Varanus varius)

Common around Muller Creek (approx. 16 miles east of Tamworth) at Moor Creek, and generally the whole district. Adults are the only specimens found and I have never heard of a juvenile being caught.

Gould's Monitors – (Varanus g. gouldii)

Found occasionally in areas ranging from secluded scrubland in Moor Creek, to Tamworth itself, a few specimens being found in backyards etc.

Bearded Dragons – (Amphibolurus b. barbatus)

Very common in almost every area. Found on fence posts, in grassy areas, up trees, etc.

Eastern Water Dragons – (Physignathus lesueurii)

Found along river banks, creeks, dams and occasionally water-holes. They are quite common along the Peel River, Tamworth, Muller Creek and also Dungowan.

Jacky Lizards – (Amphibolurus m. muricatus)

Uncommon, but sometimes found in the Moonbi Ranges and at Dungowan Dam.

Two-lined Dragons

Only found in restricted areas around Tamworth lookout and Moor Creek where they are common.

Cunningham Skinks – (Egernia cunninghami)

Found in boulder ridden country in the Moonbi Ranges where they live in colonies. A very attractive species, far more so than Sydney specimens, and completely different from these also.

White's Skinks – (Egernia whitii)

These are very plentiful in the Moonbi Ranges and Moor Creek. Also, most other places which has large granite boulders present. A grey-brown colour, with yellow markings around the eyes and on the legs. Reaches about 11-12 inches in length, and is very active, slightly secretive in the wild but quite game in captivity (though showing signs of caution at all times.)

Striated (Tree) Skinks – (Egernia striolata)

Fairly common in the Tamworth area generally, but especially the Moonbis and Tamworth lookout

Water Skinks – (Sphenomorphus quoyii)

There are two colour varieties in the area, but up to date I have only identified one, which is very common at Dungowan and along Moor Creek. However at Moor Creek (about 2 miles upstream from quoyii) there is a darker, heavier version, which is much slower in the water than quoyii. These are extremely plentiful especially when breeding and produce up to ten young each.

Striped Skinks – (Ctenotus lesueurii)

Common around foothills near Tamworth, also in dry undulating country and especially near Currububbla.

Copper-tailed Skinks – (Ctenotus taeniolatus)

Uncommon, but when found, they occur in the same areas as C. Lesueurii.

Desert Skinks – (Egernia inornata)

Uncommon, sometimes being found about twenty miles west of Tamworth.

Verreaux Skinks — (*Lygosoma l. verreauxii*)

Sometimes very common in the Moonbi Ranges, Dungowan area and generally the Tamworth district, depending on the season when searching for them.

Three-toed Skinks — (*saiphos equalis*)

Sometimes encountered in or around areas where Verreaux Skinks are plentiful.

Boutons Snake-eyed Skinks — (*Cryptoblepharus boutonii*)

Extremely common in all areas, whether it be out in the field or in the city itself.

Grass Skinks — (*Leiopisma guichenoti*)

Found in scrub country, paddocks, close to Tamworth and surrounding areas.

Common Blue tongues — (*Tiliqua scincoides*)

Common in hills around Tamworth and also at Moonbi — Kootingal. Especially found on Goonoo Goonoo Station (South of Tamworth).

Frasers Legless Lizards — (*Delma fraseri*)

Can often be found in hills around Tamworth, but numbers seem to vary in different years.

Tryon's Geckoes — (*Oedura tryonii*)

Very common in the Moonbi Ranges, living under rock exfoliations (sometimes several being found under a rock).

Velvet Geckoes — (*Oedura marmorata*)

Found in the same areas as *O. tryonii*, under bark of dead trees, and rarely under rocks.

Dtellas — (*Gehyra australis*)

Particularly common in the Moonbis, Moor Creek, and other rocky or barky areas where they are sometimes discovered in colonies.

Zig-zag Geckoes — (*Oedura lesueurii*)

Uncommon, but sometimes found in high places where rock enfoliations are common, particularly the Moonbi Ranges. Usually only younger specimens are encountered.

Thick-tailed Geckoes — (*Underwoodisaurus milii*)

Commonly called Barking Geckoes these are sometimes found under rock slabs, fairly low down, and around foothills. Mainly to be found around Moor Creek, and sometimes certain areas of the Moonbi Ranges.

TORTOISES

Eastern Long-necked Tortoise — (*Chelodina longicollis*)

These can be found in almost every river, dam, deep creek or waterholes. Although very common, they aren't caught very much, mainly because they escape into the water before anyone can touch them.

Broad-shelled Tortoise — (*Chelodina expansa*)

Rarely found, and I doubt that they really exist in the area, the only specimens being found probably being released there. (This is only an assumption.)

This is the complete list of reptiles which I have encountered or have been shown. I would welcome additions to the list if anyone knows of further occurrences.

**OBSERVATIONS ON MATING OF
MALE BROADHEADED SNAKE
HOPLOCEPHALUS BUNGAROIDES (BOIE)
AND FEMALE STEPHENS' BANDED SNAKE
HOPLOCEPHALUS STEPHENSII (KREFFT)**

Dennis Hayes

The Specimens which were subject of this observation are both approximately .75 metre (30 inches) in length, and are in prime condition, the Broad-Headed being more heavily built than the Stephens' Banded.

The Broad-Headed was captured on the 10th October, 1971 by Dick Shearim in Sydney region and obtained by me on the 5th February, 1972 and the Stephens' Banded was captured by Randolph Rohrlach and myself on the 28th December, 1972 in S.E. Queensland and has been in my possession since that date.

The specimens were placed together in the same cage on the 20th January, 1973.

Both specimens have proved to be good feeders, taking dead three-quarter-grown mice regularly.

At 1.00 a.m. on the morning of the 19th March, 1973, I arrived home and on inspecting the specimens found that the Stephens' Banded had sloughed earlier that evening and was now lying in a corner of the cage. The Broad-Headed was extremely active, circling the cage, probing every corner and crevice with it's snout. This was unusual behaviour for the specimen which usually only becomes excited when it is being removed from the cage. Unusual as it was I thought no more of it and went to bed.

I first noticed the snakes mating at 6.24 a.m. that morning. I noted that they were lying full length at the front of the cage and recorded the temperature in the room as 22° C. (approx. 72°F.).

At 6.28 a.m. the snakes separated and the Stephens' Banded moved away and entered a hollow log. The Broad-Headed, on realising the Stephens' was no longer nearby became extremely agitated and circled the cage frantically. His movements were quick and abrupt as he raised the fore-part of his body to peer over the rock, log and water dish and then lower his body to probe under the rock and log. His anxiety continued to mount until he eventually entered the log. The Stephens' immediately "erupted" from the opposite end and fled across the cage with the Broad-Headed in hot pursuit. The Stephens' suddenly halted in the corner of the cage and lay motionless. The Broad-Headed momentarily did the same, then "cruised" forward approaching the Stephens' from behind. He first touched her at the anal region with his snout then crawled up and along her back rubbing his snout down one side of her body, up and over to the other side as he progressed. He

halted forward movements when their heads drew level and resumed copulating at 6.35 a.m. As mating continued he rubbed his snout on one side of her head then the other and sometimes around under her neck. Copulation was accompanied by vigorous tail movements by both specimens.

At 6.38 a.m. the specimens again separated, the Stephens' moving away first. The snakes lay at opposite sides of the cage, the Broad-Headed motionless except for occasionally raising his tail and the Stephens' moving the rear half of its body and tail in "convulsions" which drew its rear section into a tight coil, first in a clockwise direction then anti-clockwise. This it repeated several times.

The Broad-Headed again became active and the general procedure was followed again, further copulations occurring at 6.47 a.m., 6.51 a.m., and 6.55 a.m. I then reluctantly had to discontinue observations as I left for work at 7.00 a.m.

I arrived home at 5.53 p.m. and noted that the specimens were lying motionless, face to face on the floor of the cage, the Broad-Headed half under the sandstone rock. I noted the room temperature at 28° C. (approx. 83° F). Both specimens lay motionless until 6.10 p.m. when the Broad-Headed retired fully under the rock. The Stephens' still lay motionless.

At 6.30 p.m. the Broad-Headed emerged from under the rock and resumed its position near the Stephens' and both specimens remained motionless in this position until I ceased further observation at 11.00 p.m. On rising on the morning of the 20th I found that both specimens had retired during the night and the Broad-Headed to his usual spot under the sandstone slab and the Stephens' to its favoured position in the hollow log.

The activities of both specimens has since returned to "normal" and no further mating has been observed.

Although only five copulations were actually observed by me, the general excited activity of the reptiles would suggest other copulations may have occurred between 1.00 a.m. and 6.24 a.m. and for some time after 6.55 a.m. on the 19th March, 1973.

In conclusion I offer a brief note on conditions under which these reptiles are kept:—

The snakes are housed in a cage measuring 2 ft. x 2 ft. x 2 ft., glass front, opening masonite top, masonite back, peg board sides and pine board floor. The cage is painted inside and out with a full gloss enamel paint, (white being the colour of the interior). Floor covering consists of large sandstone slabs with rounded quartz gravel (approx. 1/8 inch 1/4 inch) covering the floor surrounding the slabs. A slightly raised sandstone slab is placed on the top of another slab so as to form a tight crevice. A hollow tree limb approx. 2' in length lays diagonally along the floor. A plastic water dish 6 inches x 4 inches x 2 inches completes the arrangement. The cage is housed in my bedroom and no form of artificial heating is used. No direct sunlight lights the cage. The Broad-Headed has been brought successfully through one winter following this method of housing.

SNAKES AND LADDERS

"Snakes and Ladders" may be interested to know that a P.M. I carried out on a gravid red-bellied black snake from Yea (Vic.) revealed death due to nasal fluke (probably *Ochetosoma* spp.) which had caused inflammation and clogging of the nose and mouth, windpipe and oesophagus, and pneumonia where the lungs also contained fluke. Drugs to treat fluke are pretty harsh, and so any information on treatment would be appreciated. The snake also contained many ticks (*Aponomma fimbriatim*), and the Vet. Clinic recommends that external parasites such as these are removed by making the reptile swim an insecticidal (1% Malathion) bath. This has proved effective at the Melbourne Zoo. Mites on reptiles may also be controlled by hanging a Shelltox Pest Strip in the cage (but not over water where it may drip into the drinking trough and concentrate); these Pest Strips have been found to be harmless to reptiles. (Toxic sign in other animals though is lethargy: I'd still take care with them!). This same snake, a parasite's paradise (tongue-twister?) also contained many ribbon-like spargana, which I think you call skin-worms as they coil up in lumps throughout the body tissue. These spargana, harmless to the reptile, can be dangerous to dogs, pigs or man etc., if the reptile flesh is eaten uncooked, or rubbed into the eyes or an abraded surface or wound, so dispose of infected carcasses in the appropriate fashion.

Julie Tilbrook.

On 24.3.73, I noticed some interesting behaviour among several wild *cryptoablepharus boutonii* in my back yard.

Altogether three were involved, and for convenience these have been named "A", "B" and "C". It is not known whether "A" and "B" were male and female. The incident took place in warm sunshine on a fence at 3.00 p.m.

Two lizards ("A" and "B") were observed scuffling on a fence. "A" had hold of "B" by the dorso-lateral area. I ran inside for my camera, and on return found "A" holding "B" by the base of the tail. "B" was hanging in mid air and "A" was holding on to the fence. Eventually "B" climbed back up and tried to run away, "A" held on to "B's" hind leg, and then grabbed on to the dorso lateral area again. "B" then started walking around in circles and "A" still held on. When "B" stopped, "A" scratched "B" on the back with its hind leg.

About this time, another lizard — "C" arrived on the scene. The three lizards wiggled their tails and "C" ran away.

"A" and "B" then continued walking in circles. Eventually "B" turned round and bit "A" on the head. "A" released "B" who then ran away. Later on "C" came back and chased it away very smartly. "B" was not seen again, but "A" stayed in the area for quite awhile.

P. Rankin.

The Australian Reptile Park reports the hatching of a clutch of American Alligator, Alligator mississippiensis, eggs. To their knowledge this is the first such occurrence outside of the U.S.A.

Another achievement was the hatching of the eggs of the Red Eared Tortoise Chrysemys scripta elegans. This is the first recorded birth in Australia for these tortoises.

From Marbuk Park, Brian Barnett comments that a Pink Tongue Skink Tiliqua gerrardi when dissected revealed 53 young in the oviducts.

Two pale Headed snakes Hoplocephalus bitorquatus at the park produced 5 and 17 young respectively.

He also noted that two specimens of the Blue Bellied Black snake Pseudechis colletti guttatus laid eggs whereas other have been ovoviviparous.

Members report the following observations of reptiles possibly out of their normal range. Centralian Blue Tongue Tiliqua occipitalis multifasciata at Charters Towers.

Gibert Dragons Physignathus gilberti at Rockhampton.

Shingleback Lizards Trachydosaurus rugosus in the hills behind Mackay.

Dr. Cogger at the Australian Museum has been successful in hatching a female Banded Iguana Brachylophus fasciatus from a clutch of eggs laid four months previously.

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Enquiries

TO: Gordon Grigg and John Barker,
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OBSERVATION ON DISTRIBUTION OF THE BROAD-HEADED SNAKE Hoplocephalus bungaroides (Boie)

Dennis Hayes.

At approximately 9.00 p.m. (Sydney Summer Time,) on the 25th December, 1972, during a field trip to the Murwillumbah area of N.S.W., fellow herpetologist Randolph Rohrlach and myself were driving along a dirt road, watching it closely for reptile specimens, when we observed a specimen of Hoplocephalus bungaroides approximately 15-18 inches in length.

We were travelling at about 15-20 m.p.h. over a relatively rock free area of the road when, at the sight of the distinctive yellow spots on jet black scales showing vividly in the headlights, we both simultaneously exclaimed "Broad-headed".

The snake was travelling rapidly along the road in the same direction of travel as the car and was close to the edge. Although I stopped the car almost instantly, the snake eluded us by escaping into thick bush on the side of the road before we had a chance to get out. A thorough search for the snake with a powerful torch proved fruitless.

During this, and another, field trip to this area we identified approximately 70 snakes correctly in the light of the headlights as captures proved. In the course of the trips we became familiar with the appearance of the species of the locality, which included 3 specimens of Hoplocephalus stephensii (Krefft). We have no doubt that the snake observed was Hoplocephalus bungaroides.

At this stage I must point out that all but a few select specimens were released at their point of capture, my colleague and I only adding two specimens each to our private collections, which brings the total in each collection to five specimens.

A daytime visit to the area where the specimen was observed showed sandstone bed rock lacking exfoliation, dense scrub, heavily timbered and mountainous. These features were also similar to the habitat where the 3 specimens of Hoplocephalus stephensii were captured.

We are now thoroughly convinced that Hoplocephalus bungaroides does occur in this region even though at least one experienced herpetological associate has expressed doubts on our credibility.

COMPETITION RESULTS

The recent competition for articles to the journal was won by Mr. P. Rankin of Sydney with an article entitled "The Barred Sided Skink, Sphenomorphus tenuis tenuis in the Sydney region".

The next competition closes on the 31st October and carries a first prize of \$25.00.

JOTTINGS FROM OUR VICTORIAN BRANCH

Twenty persons took part in an excursion to Mt. Tallarook (50 miles north of Melbourne) recently

Specimens identified were:

Phyllodactylus marmoratus

Egernia cunninghami

Egernia saxatilis intermedia

Ctenotus l. lesueurii

Leilopisma g. guichenoti

Lerista bougainvillii

Several burrowing frogs — still to be identified after presentation to the Museum.

The party then moved on to the billabongs by Goulburn River at Trawood, where more frogs were collected and the following specimens identified:

Leilopisma g. guichenoti

Chelodina longicollis

A warning to all. Treat all venomous snakes with respect. One of our members was hospitalised for a day after being bitten by an 8 inch Small-eyed Snake, Cryptophis nigrescens, — he was found to be allergic to its venom.

HERPETOFAUNA

The Journal has undergone another change! Over the years it has progressed from single page newsheets to quarterly journal. However costs are substantial and it is sometimes a struggle to assemble sufficient material for each issue. After considering various alternatives it has been decided to produce the Journal half-yearly on a fully printed basis and with a content approximately that of two quarterly issues. In addition a monthly Newsheet will be prepared and distributed.

This issue is the first issue on the new basis. We are still experimenting so if you have suggestions or comments we would like to hear them.

We would also like contributions of all kinds. Some members have stated that the journal does not contain enough scientific material, others have stated that the journal is becoming too technical!

We can see the point of both statements but would point out that we can only publish what is received. The ideal would be a balance of scientific and popular material, particularly articles on "How to Keep" species. So, if you have been successful in keeping a certain species in captivity why not tell others how you did it so that they may benefit as well.

MEETINGS

SYDNEY: Meetings are held on the 4th Wednesday of each month at 8 p.m. Ground Floor, Parramatta Town Hall.

MELBOURNE: Meetings are held on the 3rd Tuesday of each month at Conference Room, National Museum (through the archway off Little Lonsdale St.) Start 7.30 p.m.

MEMBERSHIP

Membership is open to any person with a genuine interest in Australian reptiles and amphibians.

Rates of Subscription for 1973:

Life Membership	\$50.00
Family Membership	6.00
Ordinary Members	5.00
Overseas Members	5.00
Students (over 16 years)	2.50
Junior Members (16 years and under)	1.00
Subscribers to "Herpetofauna" (Aust. only)	2.00

Subscriptions should be made payable to the Australian Herpetological Society and posted to the Subscription Secretary, Victorian members may pay direct to the Victorian Branch Secretary.